ADEM GENERAL PERMIT RATIONALE
PAINT AND ALLIED PRODUCTS INDUSTRY
ALG170000

DATE: **May 30, 2017**

PREPARED BY: **Lee Warren**

LOCATION: ALL WATERS OF THE STATE NOT DESIGNATED OUTSTANDING NATIONAL RESOURCE WATER OR OUTSTANDING ALABAMA WATER

PERMIT IS REISSUANCE DUE TO EXPIRATION

DISCUSSION:

The Department is proposing to reissue NPDES General Permit ALG170000. The permit is intended to cover storm water discharges associated with the manufacturing and storage of paints, varnishes, lacquers, enamels, and allied products; non-contact cooling water, uncontaminated condensate, cooling tower blowdown, boiler blowdown, demineralizer wastewater, vehicle and equipment exterior washing operations, and storm water from fueling, petroleum storage and handling, equipment storage, and maintenance areas. Limits for noncontact cooling water, uncontaminated condensate, cooling tower blowdown, boiler blowdown, and wash water are included.

NOTE: The parameters for each of the following discharges, i.e. DSN#...., are proposed to be continued in this permit, as in the previous permit, unless otherwise noted.

DSN001: Storm water runoff associated with the manufacturing and storage of paints, varnishes, lacquers, enamels and allied products.

Rainfall

The amount of rainfall occurring during the monitored rain event is to be reported in inches. Monitoring frequency is 1/year.

pH pH limits are not imposed for storm water discharges as the permittee wouldn't be expected to significantly impact the pH of the storm water. Therefore, only monitoring is required. Monitoring frequency is 1/year.

Biochemical Oxygen Demand (BOD), 5 day

The only part of the biochemical oxygen demand which will exert an oxygen demand on a receiving stream is the organic portion which is measured as biochemical oxygen demand. The monitoring of BOD is used to measure the effectiveness of the BMP plan. Monitoring frequency is 1/year.

Chemical Oxygen Demand (COD)

COD serves as a measure of the presence of reducing chemical compounds in the storm water runoff from spills or exposure of fuel, paint, or solvents. The COD parameter will also measure the presence of reducing biological wastes and is selected in addition to biochemical oxygen demand (BOD_5) for this reason. No limitations are proposed. Monitoring will be used to evaluate the BMP plan effectiveness. Monitoring frequency is 1/year.

Oil and Grease

The oil and grease daily maximum limit is 15 mg/l. This limit has been demonstrated through experience by the Department to be achievable through the use of proper Best Management Practices (BMPs). In addition, to further ensure adequate BMPs, a requirement for no oil sheen is also imposed. Monitoring frequency is 1/year.

Total Recoverable Zinc

The monitoring of total recoverable zinc will be used as an indicator of the effectiveness of the facility's BMP plan. Monitoring frequency is 1/year.

Total Suspended Solids

The permit includes the monitoring of total suspended solids to evaluate BMP effectiveness. Monitoring frequency is 1/year.

DSN002: Discharges associated with non-contact cooling water, uncontaminated condensate, cooling tower blowdown, boiler blowdown, and demineralizer wastewater. This outfall requires monitoring and/or limitations for the following parameters:

Flow Flow is to be measured in gallons per day. Monitoring frequency is 1/month.

pH pH limitations are 6.0 daily minimum and 8.5 daily maximum for waste water discharges as set forth in ADEM Administrative Code R. 335-6-10. Monitoring frequency is 1/month.

Temperature

The temperature will be limited to 90 degrees Fahrenheit, except in the Tennessee and Cahaba River Basins and in the Tallapoosa River from Thurlow Dam to the confluence of the Tallapoosa and Coosa Rivers where it will be limited to 86 degrees Fahrenheit in accordance with ADEM Administrative Code R. 335-6-10. Monitoring frequency is 1/month.

Total residual chlorine

The daily maximum and the monthly average limits for chlorine are 0.019 mg/l and 0.011 mg/l. EPA's suggested water quality criteria for total residual chlorine of 0.011 mg/l for chronic toxicity and 0.019 mg/l for acute toxicity are being used as the monthly average and maximum values respectively for discharges into zero flow streams. Monitoring frequency is 1/2 weeks.

In accordance with a letter dated August 11, 1998 from EPA Headquarters and a 1991 memorandum from EPA Region 4's Environmental Services Division (ESD), due to testing and method detection limitations, a Total Residual Chlorine measurement below 0.05 mg/L shall be considered below detection for compliance purposes.

Based on best professional judgment (BPJ), facilities will be required to monitor for the concentrations of chlorine listed above except under two conditions. The conditions are:

1. If no chlorine is present in or added to the source water.

2. If the distance from the end of the pipe to the receiving water of the state is greater than 2,500 feet and the applicant can demonstrate that the above limits are being met at the receiving water of the state.

If these conditions cannot be met, the permittee must monitor as required by the permit. The permittee will be required to monitor during shock chlorination if conducted.

However, if these conditions are met, the facility must code the total residual chlorine parameter on the electronic Discharge Monitoring Report (E-DMR) as *9 or the hardcopy DMR as "NODI=9" (monitoring is conditional not required this period).

Chlorides, Total

If the boiler blowdown exceeds 5,000 gallons per day or if demineralizer wastewater is discharged, then total chlorides must be monitored in addition to the flow, pH, and temperature. Chlorides will have a limit of 860 mg/l to protect water quality. This limitation is based upon EPA's National Recommended Water Quality Criteria. If necessary, the demineralizer wastewater may be diluted to meet water quality standards. Monitoring frequency is 1/month.

Total Dissolved Solids

If the boiler blowdown exceeds 5,000 gallons per day or if demineralizer wastewater is discharged, then total dissolved solids must be monitored. If necessary, the demineralizer wastewater may be diluted to meet water quality standards. Monitoring frequency is 1/month.

Biocides

The permit requires that the permittee shall notify the Director in writing not later than sixty (60) days prior to instituting the use of any biocide corrosion inhibitor or chemical additive in a cooling or boiler system, not identified in the application for this permit, from which discharge is allowed by this permit. Such notification shall include:

(1) name and general composition of biocide or chemical,

(2) 48-hour or 96-hour LC50 data for the fathead minnow (Pimephales promelas) and cladoceran (Ceriodaphnia dubia) for fresh water discharges. For salt water, the mysid shrimp; and sheepshead minnow or inland silverside. Other acceptable aquatic organisms may be allowed by the Department if sufficient information is submitted.

(3) quantities to be used,

(4) frequencies of use,

(5) maximum discharge concentrations, and

(6) EPA registration of number, if applicable.

The use of a biocide or additive containing tributyl tin, tributyl tin oxide, zinc, chromium or related compounds in a cooling or boiler system(s), from which a discharge regulated by the permit occurs, is prohibited. The use of any additive not identified in the permit or in the application for the permit prior to a determination by the Department that permit modification controlling discharge of the additive is prohibited.

Cooling Water Intake Structures (CWIS)

Section 316(b) of the Clean Water Act requires that facilities minimize adverse environmental impact resulting from the operation of cooling water intake structures (CWIS) by using the "best technology available" (BTA). U.S. EPA has promulgated rules to implement these requirements for new facilities (Phase I rules), existing industrial facilities (Phase II rules) and new offshore oil and gas extraction facilities (Phase III rules), and implementation must take place through the issuance of NPDES permits. However, there is a universe of facilities which are not specifically addressed by the rules, including:

- New and existing facilities, including offshore oil and gas, with a CWIS design flow less than 2 MGD;

All of these facilities, including those not specifically addressed by rules, must be evaluated for 316(b) compliance. For those facilities not addressed in Phase I, II, or III rules, a BTA determination must be made using best professional judgment.

For new facilities that are not subject to the Phase I rule, existing facilities that are not subject to the Phase II rule, or oil and gas facilities that are not subject to the Phase III rule, an initial determination of BTA will be made for the facility CWIS during the permit coverage renewal process.

The data submitted shall include:(1) any impingement and entrainment data based on the operation of the facility's CWIS, collected since the effective date of this NPDES permit, (2) a detailed description of any changes in the operation of the CWIS, or changes in the type of technologies used at the CWIS such as screens or other technologies affecting the rates of impingement and/or entrainment of fish and shellfish, and (3) an estimate of the intake flow reduction at the facility based upon the use of a 100 percent (or some lesser percentage) closed-cycle re-circulating cooling water system compared to a conventional once-through cooling water system. In addition the facility may submit the following as defined in 40 CFR 122.21(r) if data is available:

-Source water physical data
-Cooling water intake structure data
-Source water baseline biological characterization data
-Cooling water system data
-Intended method of compliance with impingement mortality standard

-Existing entrainment performance studies
-Operational Status

The CWIS must be operated and maintained in a manner that minimizes impingement and entrainment levels. Documentation detailing the steps that have and are being taken to minimize the impingement and entrainment levels shall be maintained on-site and made available upon request during inspections.

If an entity provides water to the permittee which is used for cooling by means of a surface water intake, the intake structure operated by the entity must be determined to represent the best technology available (BTA) to minimize adverse environmental impact in accordance with Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

If the entity providing water to the permittee is a public water system in accordance with Section 1401 of the Safe Water Drinking Act or the water used for cooling consists of treated effluent which would otherwise be discharged, the permittee is exempt from the requirements of this permit condition.

DSN004: Storm water runoff from fueling, petroleum storage and handling, equipment storage, and maintenance areas. This outfall requires monitoring and/or limitations for the following parameters:

Rainfall
See DSN001. Monitoring frequency is 1/quarter.

pH See DSN001. Monitoring frequency is 1/quarter.

Benzene (Facilities that discharge into a body of water which is designated as a public water supply or within 24 hours travel time to public water supply)

The Department is proposing a daily maximum limit of 1.12 μg/l for benzene. This limit is based on the benzene human health (consumption of fish and water) standard for streams designated as public water supply as set forth at ADEM Administrative Code R. 335-6-10. A limit of 1.12 μg/l for benzene should be protective of water quality. Monitoring frequency is 1/ quarter.

Benzene (All other areas)

The Department is proposing a limit of 15.5 μg/l for benzene. The human health (consumption fish only) standard for benzene is now 15.5 μg/l and should be protective of water quality. Monitoring frequency is 1/ quarter.

Ethylbenzene (Facilities that discharge into a body of water which is designated as a public water supply or within 24 hours travel time to public water supply)

The Department is proposing a daily maximum limit of 448 μg/l for ethylbenzene. This limit is based on the ethylbenzene human health (consumption of fish and water) standard for streams designated as public water supply as set forth at ADEM Administrative Code R. 335-6-10. A limit of 448 μg/l for ethylbenzene should be protective of water quality. Monitoring frequency is 1/ quarter.

Ethylbenzene (All other areas)

The Department is proposing a limit of 1,244 μg/l for ethylbenzene. The human health (consumption fish only) standard for ethylbenzene is 1,244 μg/l and should be protective of water quality. Monitoring frequency is 1/ quarter.

Toluene (Facilities that discharge into a body of water which is designated as a public water supply or within 24 hours travel time to public water supply)

The Department is proposing a daily maximum limit of 1,206 μg/l for toluene. This limit is based on the toluene human health (consumption of fish and water) standard for streams designated as public water supply as set forth at ADEM Administrative Code R. 335-6-10. A limit of 1,206 μg/l for toluene should be protective of water quality. Monitoring frequency is 1/ quarter.

Toluene (All other areas)

The Department is proposing a limit of 8,723 μg/l for toluene. The human health (consumption fish only) standard for toluene is 8,723 μg/l and should be protective of water quality. Monitoring frequency is 1/ quarter.

Xylene

The results of xylene will be used to track the effectiveness of the permittee's BMP plan. Monitoring frequency is 1/ quarter.

Oil and Grease

See DSN001. Monitoring frequency is 1/quarter.

Naphthalene

The naphthalene daily maximum limit is 620 μg/l. In the absence of state water quality criteria for naphthalene, this limit is based on information contained in the EPA Quality Criteria for Water 1986 Document (EPA 440/5-86-001) May 1, 1986. This limitation has also been shown to be protective of water quality. While naphthalene is insoluble in water it is soluble in both benzene and toluene. Therefore, if benzene is sufficiently removed using BAT technology, the naphthalene should also be removed. Monitoring for naphthalene will only be required at facilities which handle aviation fuel, jet fuel or diesel fuel. Monitoring frequency is 1/ quarter.

MTBE (methyl tertiary butyl ether)

MTBE is an oxygenate that is added to fuel and is found at many petroleum release sites. The results of MTBE monitoring will be used to track the effectiveness of the permittee's BMP plan and equipment performance. Monitoring frequency is 1/ quarter.

DSN006: Discharge limitations and monitoring requirements for uncontaminated storm water from fueling, petroleum storage and handling, equipment storage, and maintenance areas:

For facilities to have only DSN006 in lieu of DSN004, they must have a BMP Plan in place which addresses the above industrial activities, they must have a valid SPCC Plan, if required by 40 CFR Part 112, and they must be determined by the Department to not have a significant potential for environmental impact.

DSN007: Vehicle and equipment exterior washing operations that DO NOT use solvents. This outfall would not include parts washing or washing of the interior of tank trailers and rail tank cars. Also, due to the large variety of possible solvents and thus the monitoring complexities, the use of solvents would not be included in this outfall. An Individual NPDES Permit could better address the particular solvents that a facility may choose to use. This outfall requires monitoring and/or limitations for the following parameters:

Flow See DSN002. Monitoring frequency is 1/week.

pH See DSN002. Monitoring frequency is 1/month.

Oil and Grease

See DSN001. Monitoring frequency is 1/month.

Total Phosphorus

Excessive phosphorus can cause eutrophication in a receiving stream. Based on best professional judgment (BPJ), a daily maximum limit of 1.0 mg/l of phosphorus is achievable and should prevent or minimize eutrophication in the receiving stream. The 1.0 mg/l limit should also minimize the use of phosphorus based detergents. The limit was taken from "Process Design Manual for Phosphorus Removal" EPA 625/1-76-001a. Monitoring frequency is 1/month.

Total Suspended Solids

The daily maximum limit for TSS is 50 mg/l. This limit is based on BPJ and is considered achievable using BMPs. Monitoring frequency is 1/month.

This permit does not authorize new sources or new discharges of pollutants of concern to impaired waters unless consistent with an EPA-approved Total Maximum Daily Load (TMDL), if applicable, and applicable State law. Impaired waters are those that do not meet applicable water quality standards and are identified on the State of Alabama's 303(d) list, or an EPA approved TMDL. Pollutants of concern are those pollutants for which the water body is listed as impaired and contribute to the listed impairment.

Industrial General Permits may now cover discharges to a treasured Alabama Lake (TAL). Currently, Lake Martin is the only lake designated as a TAL. In the past permit cycle, industrial discharges to treasured Alabama Lakes were not covered under the General Permit. Now instead of excluding all such discharges from Industrial General Permit coverage, it will be based on a case by case review. However, the Department may still require certain discharges to a treasured lake to have coverage under an Individual NPDES Permit.

The annual petroleum certification shall be submitted in the form of an annual certification Discharge Monitoring Report (DMR).